

ATTORNEY DOCKET NO: CXU-349
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re Application of Boland, et al.

Serial No: 10/666,836

Filed: September 17, 2003

Title: Ink-Jet Printing of Viable Cells

) Group Art Unit: 2861
)
) Examiner: Unknown
)
) Confirmation No: 5781
)
) Customer No: 22827

Mail Stop DD
Commissioner of Patent and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

**TRANSMITTAL LETTER FOR
INFORMATION DISCLOSURE STATEMENT**

Dear Sir:

Pursuant to 37 C.F.R. 1.56 and in accordance with 37 C.F.R. 1.97 et seq., Applicants, through and by their representative, hereby wish to direct the Examiner's attention to the documents presented herewith for the Examiner's review and convenience.

By inclusion of any given document in this Information Disclosure Statement, Applicants in no way admit that such document is effective as prior art against the above-identified application.


Additionally, submission of any document is not to be taken as an admission of the materiality of the document to the prosecution of the present application.

The Examiner is requested to review each cited document and personally determine its prior art status.

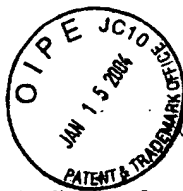
Respectfully requested,

DORITY & MANNING, P.A.

1/13/04
Date


Christina L. Mangelsen, Patent Agent
Registration No. 50,244

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INFORMATION DISCLOSURE STATEMENT

In re Application of:	Boland, et al.	Attorney Docket No:	CXU-349
Serial No:	10/666,836	Date:	January 13, 2004
Filed:	September 17, 2003	Art Unit:	2861
Confirmation No:	5781	Our Customer ID:	22827
Title:	Ink-Jet Printing of Viable Cells	Our Account No:	04-1403

Commissioner for Patents
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Sir:

The following is an Information Disclosure Statement for the captioned patent application, pursuant to 37 CFR Sections 1.56, 1.97, and 1.98.

1. ☒ Attached hereto is:

- a. ☒ A list of materials for consideration per Rule 98(a)(1): 4 page(s)
- b. ☒ A legible copy of each patent, publication, or other item listed per Rule 98(1)(2), unless not required per Rule 98 and/or as indicated on the attached list(s):
93 item(s)
- c. ☐ For each non-English language item listed, pursuant to Rule 98(a)(3), a concise explanation of the relevance thereof as it is presently understood by the individual designated in Rule 56(c) most knowledgeable about the content of such items: _____
☐ Such explanation is provided in the Search Report from a corresponding application enclosed herewith along with any enclosed translation into English.

2. ☒ This Information Disclosure Statement is being filed [CHECK ONE]:

- a. ☒ WITHIN THREE MONTHS of the application filing date, national stage date of entry, or along with or after a request for continued examination, OR BEFORE the mailing date of a first Office Action on the merits, which ever event occurs last, WHEREFORE per Rule 97(b) NO filing fee or Rule 97(e) certificate is required.
- b. ☐ AFTER the time periods of section 2.a above, but BEFORE a Final Action, Notice of Allowance OR an action that otherwise closes prosecution, WHEREFORE PER Rule 97(c) submitted herewith is [CHECK ONE]:
 - i. ☐ Certification per Rule 97(e); OR
 - ii. ☐ Filing Fee per Rule 17(p)\$180.00
- c. ☐ AFTER a Final Action OR Notice of Allowance, but BEFORE payment of the issue fee, WHEREFORE per Rule 97(d) submitted herewith is:
 - i. ☐ Certification per Rule 97(e); AND
 - ii. ☐ Filing fee per Rule 17(p)\$180.00

3. ☐ Rule 97(e) Certification; per Rule 97(e), the undersigned certifying party make the following certification statement [CHECK ONE]:

- a. ☐ That each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement; OR
- b. ☐ That no item of information contained in this Information Disclosure Statement was cited in a foreign patent office in a counterpart foreign application and to the knowledge of the undersigned after making a reasonable inquiry, was known to any individual designated in Rule 56(c) more than three months prior to the filing of this statement.

CERTIFYING PARTY (if different from bottom signature; omission here indicates that certification is being made by signer per signature below).

Name: _____
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Signature: _____
Date: _____

- 4.[x] DEPOSIT ACCOUNT AUTHORIZATION: The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any fees in addition to the fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 (deficiency only) now or hereafter relative to this application and the resulting official document under Rule 20, or credit any overpayment, to our Account No. shown in the heading hereof for which purpose a duplicate copy of this sheet is attached. This statement does not authorize charge of the issue fee in this case.
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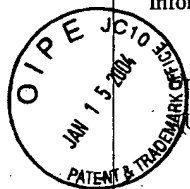
DORITY & MANNING, P.A.

By: Christina L. Mangelsen, Patent Agent

Reg. No: 50,244

Signature: 

Date: January 13, 2004



(Rev. 5/92) Information Disclosure Statement List By Applicant(s) Under 37 CFR Section 1.98(a) (1) Use several sheets if necessary	Attorney Docket Number: CXU-349	Serial Number: 10/666,836
	Applicant: Boland, et al.	
	Filing Date: September 17, 2003 Confirmation No: 5781	Group Art Unit: 2861

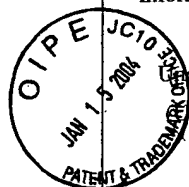
NOTE:

If no indication is made in the column marked "COPY NOTE," the required legible copy of the corresponding item is submitted herewith; otherwise, a copy is not required and/or not submitted, for the following reason(s) [corresponding reason number is listed in "COPY NOTE" column]

- (1) This item is cumulative, per Rule 98(c)
- (2) A copy of this item was previously cited by or submitted to the U.S. Patent and Trademark Office in:
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- (3) Both reasons (1) and (2) apply
- (4) No legible complete copy is possessed, in custody of controlled, or readily available
- (5) Per the U.S. Patent and Trademark Office's waiver of Rule 98(a)(2)(i), the item is a U.S. patent or patent application publication, and the present application was filed after June 30, 2003.

U.S. PATENT DOCUMENTS											
EXAMINER INITIALS	PATENTEE NAME	PATENT NUMBER							ISSUE DATE	COPY NOTE	
	Masters	4	2	4	7	2	7	9	01/27/1981	5	
	Barr, et al.	4	2	9	1	9	9	2	09/29/1981	5	
	Bronson, et al.	4	5	8	5	1	3	9	04/29/1986	5	
	Liu, et al.	4	5	9	4	5	9	7	06/10/1986	5	
	Howkins	4	6	4	6	1	0	6	02/24/1987	5	
	Masters	4	6	6	5	4	9	2	05/12/1987	5	
	Liu, et al.	4	6	7	3	3	0	4	06/16/1987	5	
	Sanders, Jr., et al.	4	7	7	2	1	4	1	09/20/1988	5	
	Forsyth, et al.	4	8	8	9	4	3	8	12/26/1989	5	
	Sanders, Jr., et al.	4	8	9	6	9	8	0	01/30/1990	5	
	Sanders, Jr., et al.	4	9	2	1	3	6	5	05/01/1990	5	
	Sanders, Jr., et al.	4	9	4	8	2	8	0	08/14/1990	5	
	Sanders, Jr., et al.	4	9	6	9	7	5	8	11/13/1990	5	
	Masters	4	9	8	0	1	1	2	12/25/1990	5	
	Peddle, et al.	5	0	1	6	1	2	1	05/14/1991	5	
	Masters	5	0	3	9	2	9	7	08/13/1991	5	
	Sanders, Jr., et al.	5	0	4	0	9	1	1	08/20/1991	5	
	Peddle, et al.	5	0	7	5	8	0	5	12/24/1991	5	
	Masters	5	1	3	4	5	6	9	07/28/1992	5	
	Sachs, et al.	5	2	0	4	0	5	5	04/20/1993	5	
	Masters	5	2	1	6	6	1	6	06/01/1993	5	
	Cima, et al.	5	4	9	0	9	6	2	02/13/1996	5	
	Bogentoft, et al.	5	4	9	2	9	3	7	02/20/1996	5	
	Masters	5	5	4	6	3	1	3	08/13/1996	5	
	Pease, et al.	5	5	9	9	6	9	5	02/04/1997	5	
	Heller, et al.	5	6	0	5	6	6	2	02/25/1997	5	
	Hayes, et al.	5	6	5	8	8	0	2	08/19/1997	5	
	Masters, et al.	5	6	9	4	3	2	4	12/02/1997	5	
	Cha, et al.	5	7	0	2	7	1	7	12/30/1997	5	
	Heinzl, et al.	5	7	3	9	8	3	2	04/14/1998	5	
	Santini, Jr., et al.	5	7	9	7	8	9	8	08/25/1998	5	
	Pease, et al.	5	8	3	1	0	7	0	11/03/1998	5	
	Heller, et al.	5	9	2	9	2	0	8	07/27/1999	5	
	Chenichik, et al.	6	0	8	7	1	0	2	07/11/2000	5	

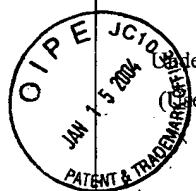
(Rev. 5/92) Information Disclosure Statement List By Applicant(s) Under 37 CFR Section 1.98(a) (1) Use several sheets if necessary)	Attorney Docket Number: CXU-349	Serial Number: 10/666,836
	Applicant: Boland, et al.	
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	An, et al.	6	1	0	3	5	2	8	08/15/2000	5
	Kane, et al.	6	1	0	9	7	1	7	08/29/2000	5
	Santini, Jr., et al.	6	1	2	3	8	6	1	09/26/2000	5
	Mansmann	6	1	3	2	4	6	8	10/17/2000	5
	Shivashankar, et al.	6	1	3	9	8	3	1	10/31/2000	5
	Perbost	6	1	7	1	7	9	7	01/09/2001	5
	Griffith, et al.	6	1	9	7	5	7	5	03/06/2001	5
	Pease, et al.	6	2	3	9	2	7	3	05/29/2001	5
	Gaylo, et al.	6	2	6	1	4	9	3	07/17/2001	5
	Gaylo, et al.	6	3	3	6	4	8	0	01/08/2002	5
	Gaylo, et al.	6	3	4	1	9	5	2	01/29/2002	5
	Ross	6	3	9	4	5	8	5	05/28/2002	5
	Speakman	6	4	0	2	4	0	3	06/11/2002	5
	Blanchard	6	4	1	9	8	8	3	07/16/2002	5
	Shah, et al.	6	4	5	1	3	4	6	09/17/2002	5
	Sherwood, et al.	6	4	5	4	8	1	1	09/24/2002	5
	Vacanti	6	4	5	5	3	1	1	09/24/2002	5
	Suslick, et al.	6	4	9	5	1	0	2	12/17/2002	5
	Delametter, et al.	6	4	9	7	5	1	0	12/24/2002	5
	Monkhouse, et al.	6	5	1	4	5	1	8	02/04/2003	5
	Rausch, et al.	6	5	2	7	3	7	8	03/04/2003	5
	Lee, et al.	6	5	3	6	8	7	3	03/25/2003	5
	Kashiwagi, et al.	6	5	3	6	8	9	5	03/24/2003	5
	Samra, et al.	6	5	3	8	0	8	9	03/25/2003	5
	Ohtsuka, et al.	6	5	4	3	8	7	2	04/08/2003	5
	Monkhouse, et al.	6	5	4	7	9	9	4	04/15/2003	5
	Koitaabashi, et al.	6	5	5	0	9	0	4	04/22/2003	5
	Min, et al.	6	5	6	1	6	2	6	05/13/2003	5
	Gonzalez	6	5	6	1	6	4	2	05/13/2003	5
	Anderson, et al.	6	5	6	5	1	7	6	05/20/2003	5

U.S. PATENT APPLICATION PUBLICATIONS

EXAMINER INITIALS	APPLICANT'S NAME	PUBLICATION NUMBER							PUBLICATION DATE	COPY NOTE
	Vacanti, et al.	0	0	0	3	5	7	5	01/02/2003	5
	MacLaughlin, et al.	0	0	3	1	5	0	0	03/14/2002	5
	Sabatini, et al.	0	0	3	2	2	0	3	02/13/2003	5
	Bradbury, et al.	0	0	5	9	0	4	9	05/16/2002	5
	Chilkoti, et al.	0	0	5	9	5	3	7	03/27/2003	5
	Mutz, et al.	0	0	6	4	8	0	8	05/30/2002	5
	Mutz, et al.	0	0	6	4	8	0	9	05/30/2002	5
	Materna	0	0	8	4	2	9	0	07/04/2002	5
	Weitzel, et al.	0	0	8	9	5	6	1	07/11/2002	5
	Mutz, et al.	0	0	9	0	7	2	0	07/11/2002	5
	Rowe, et al.	0	1	0	6	4	1	2	08/08/2002	5
	Yeo, et al.	0	1	6	0	1	0	9	10/31/2002	5
	Jeong, et al.	0	1	7	3	5	8	6	11/21/2002	5



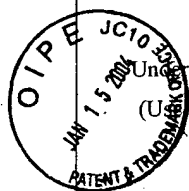
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	Applicant: Boland, et al.	
	Filing Date:	Group Art Unit:
	September 17, 2003	2861
	Confirmation No:	
	5781	

FOREIGN PATENT DOCUMENTS									
EXAMINER INITIALS	COUNTRY	DOCUMENT NUMBER	PUBLICATION DATE	TRANSLATION			COPY NOTE		
				YES	NO	N/A			

*"NO" means that no copy of an English language translation is within the possession, custody, or control of, or is readily available to any individual designated in Rule 56(c).

EXAMINER INITIALS	OTHER DOCUMENTS		COPY NOTE
	Specify author (if any), Title, Pertinent Pages, Date & Place of Publication		
	Article – <i>Cell and Organ Printing 1: Protein and Cell Printers</i> , W. Cris Wilson, Jr. and Thomas Boland, The Anatomical Record Part A, Vol. 272A, 2003, pp. 491-496		
	Article – <i>Cell and Organ Printing 2: Fusion of Cell Aggregates in Three-Dimensional Gels</i> , Thomas Boland, Vladimir Mironov, Anna Gutowska, Elisabeth A. Roth, and Roger R. Markwald, The Anatomical Record Part A, Vol. 272A, 2003, pp. 497-502		
	Article – <i>Characterization of Patterned Self-Assembled Monolayers and Protein Arrays Generated by the Ink-Jet Method</i> , Laura Pardo, W. Cris Wilson, Jr., and Thomas Boland, Langmuir, Vol. 19, No. 5, 2003, pp. 1462-1466		
	Article – <i>Organ printing: computer-aided jet-based 3D tissue engineering</i> , Vladimir Mironov, Thomas Boland, Thomas Trusk, Gabor Forgacs, and Roger R. Markwald, TRENDS in Biotechnology, Vol. 21, No. 4, April 2003, pp. 157-160		
	Article – <i>A Thermal Inkjet Printhead with a Monolithically Fabricated Nozzle Plate and Self-Aligned Ink Feed Hole</i> , Jae-Duk Lee, Jun-Bo Yoon, Jae-Kwan Kim, Hoon-Ju Chung, Choon-Sup Lee, Hi-Deok Le, Ho-Jun Lee, Choong-Ki Kim, and Chul-Hi Han, Journal of Microelectromechanical Systems, Vol. 8, No. 3, September 1999, pp. 229-236		
	Article – <i>New inexpensive Technologies for Two and Three-dimensional Patterning of Proteins on Solid Supports</i> , W. C. Wilson, Jr. and T. Boland, Society for Biomaterials, 27 th Annual Meeting Transactions, May 2001, 1 page		
	Article – <i>Six Technologies that will Change the World</i> , David Pescovitz, Business 2.0, May 2003, 6 pages		

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	CXU-349	10/666,836
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	HP DeskJet 660C Printer – Printer Product Specifications, May 6, 2003, pp. 1-12		
	HP DeskJet 550C Printer – Printer Product Specifications, May 5, 2003, pp. 1-6		
	Data Sheet from Internet Entitled <i>Methods for Measuring Apoptotic Cell Death by Flow Cytometry</i> , www.cyto.purdue.edu , 1 page		
	Data Sheet from Internet Entitled <i>HAT Capabilities</i> , www.sciperio.com , 2 pages, April 22, 2003		
	Information from Internet on Sciperio, Inc. collaborators, www.sciperio.com , 2 pages, April 25, 2003		
	Information from Internet – BBC News – Health entitled <i>Artificial tissue?</i> , www.bbc.co.uk , 4 pages, January 23, 2003		
	Article from Internet Entitled <i>Ink-jet printing creates tubes of living tissue</i> , NewScientist.com , January 22, 2003, 2 pages		
	Abstract – <i>High-Throughput Technologies for Cell Patterning and Quantitative Assaying</i> , T. Boland, W. C. Wilson, and L. F. Pardo, Publication of Abstract May 31, 2002, 2 pages		
	Information from Internet – <i>Printing a heart</i> , Sara Abdulla, www.nature.com , October 11, 1999, 2 pages		
EXAMINER		DATE CONSIDERED	
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